

1. A network processor, comprising:
  - a crypto unit including
    - a cipher core to cipher data received by the crypto unit;
    - an authentication core to authenticate the ciphered data; and
    - an authentication buffer to store the ciphered data and provide the ciphered data to the authentication core in a predetermined amount depending upon an authentication algorithm implemented in the authentication core.
2. The network processor according to claim 1, wherein the crypto unit further includes a plurality of processing contexts.
3. The network processor according to claim 1, wherein the authentication buffer includes a number of buffer elements corresponding to a number of processing contexts.
4. The network processor according to claim 3, wherein each of the buffer elements stores data for a respective one of the processing contexts.
5. The network processor according to claim 1, wherein the buffer elements have a size that is at least as large as a largest authentication algorithm block size.
6. The network processor according to claim 1, wherein the crypto unit includes a plurality of cipher cores, a plurality of authentication cores, and a plurality of authentication buffer elements.
7. The network processor according to claim 6, wherein the plurality of cipher cores are coupled to the authentication buffer elements via a first multiplexer device and the authentication buffer elements are coupled to the plurality of authentication cores via a second multiplexer device.

8. The network processor according to claim 1, wherein the authentication core processes data in 16 byte and/or 64 byte blocks.
9. The network processor according to claim 8, wherein the cipher core processes data in 8 byte and/or 16 byte blocks.
10. A method of cryptographic data processing, comprising:
  - receiving data at a crypto unit;
  - storing the received data in blocks having a predetermined size;
  - storing the data blocks in an authentication buffer until an aggregate size of the stored data blocks is at least a predetermined amount; and
  - authenticating the data blocks from the authentication buffer upon receipt of the data in the predetermined amount.
11. The method according to claim 10, further including ciphering the received data in a first one of a plurality of cipher cores.
12. The method according to claim 11, further including ciphering data using a first one of a plurality of cipher algorithms.
13. The method according to claim 11, further including authenticating the ciphered data in a plurality of authentication cores.
14. The method according to claim 10, further including authenticating data using a plurality of authentication algorithms.
15. The method according to claim 11, further including storing the ciphered data in a first one of a plurality of buffer elements in the authentication buffer based upon an associated one of a plurality of processing contexts.

16. The method according to claim 11, further including ciphering data in a plurality of cipher cores, storing ciphered data in a first one of a plurality of buffer elements in the authentication buffer based upon an associated one of a plurality of processing contexts, authenticating ciphered data in a plurality of authentication cores, and processing a plurality of packets in parallel.

17. The method according to claim 10, further including determining whether the received data is to be ciphered.

18. A network processor, comprising:

- a plurality of cipher cores;

- an authentication buffer to stored ciphered data from the plurality of cipher cores, the authentication buffer having a number of buffer elements corresponding to a number of processing contexts, wherein the authentication buffer is coupled to the plurality of cipher cores via a first bus; and

- a plurality of authentication cores to authenticate ciphered data from the authentication buffer, wherein the authentication buffer is coupled to the plurality of authentication cores via a second bus.

19. The network processor according to claim 18, wherein a size of at least one of the plurality of buffer elements in the authentication buffer is at least as large as a largest authentication algorithm block size.

20. A network switching device, comprising.

- a network processor including a crypto unit having

- a cipher core to cipher data received by the crypto unit;

- an authentication core to authenticate the ciphered data; and

- an authentication buffer to store the ciphered data and provide the ciphered data to the authentication core in a predetermined amount depending upon an authentication algorithm implemented in the authentication core.

21. The device according to claim 20, wherein the crypto unit includes a plurality of processing contexts.
22. The device according to claim 21, wherein the authentication buffer includes a number of buffer elements corresponding to a number of processing contexts.
23. The device according to claim 20, wherein each of the buffer elements stores data for a respective one of the processing contexts.
24. The device according to claim 20, wherein the device includes one or more of a router, network switch, security gateway, storage area network client, and server.
25. A network, comprising.  
a network switching device comprising a network processor including a crypto unit having  
a cipher core to cipher data received by the crypto unit;  
an authentication core to authenticate the ciphered data; and  
an authentication buffer to store the ciphered data and provide the ciphered data to the authentication core in a predetermined amount depending upon an authentication algorithm implemented in the authentication core.
26. The network according to claim 25, wherein the crypto unit includes a plurality of processing contexts.
27. The network according to claim 26, wherein the authentication buffer includes a number of buffer elements corresponding to a number of processing contexts.

28. The network according to claim 25, wherein each of the buffer elements stores data for a respective one of the processing contexts.

29. The network according to claim 25, wherein the device includes one or more of a router, network switch, security gateway, storage area network client, and server.